



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/714,105

11/14/2003

Anthony Correale JR.

RPS920030130US1

1935

25299

7590

06/09/2006

IBM CORPORATION

PO BOX 12195

DEPT YXSA, BLDG 002

RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

PATEL, KAUSHIKKUMAR M

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/714,105	CORREALE ET AL.	
	Examiner	Art Unit	
	Kaushikkumar Patel	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's communication filed April 12, 2006 in response to PTO office action mailed January 12, 2006. The applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. In response to last office action, claims 1, 2, 4, 8, 12 have been amended. No claims have been canceled. Claims 15 and 16 have been added. As a result, claims 1-16 remain pending in this application.

Allowable Subject Matter

3. The indicated allowability of claim(s) 11 is withdrawn in view of the newly discovered reference(s) to Aoki et al. (US 6,356,990 B1) and Shirotori et al. (5,920,888). Rejections based on the newly cited reference(s) follow.

Response to Arguments

4. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2188

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 6,356,990 B1) (Aoki herein after) and further in view of Shirotori et al. (5,920,888) (Shirotori herein after).

As per claim 1, Aoki teaches a system for accessing a two-way associative cache having first and second ways (fig. 2), comprising:

an effective address register connected to simultaneously apply an address to each of said two-way associative cache (fig. 2, item 20, column 3, lines 5-14);

an output multiplexer for selecting data from one of first and second ways of said two way associative cache in response to a select signal identifying one of said ways of said associative cache (fig.2, item 25, column 3, lines 25-28); and

a byte select circuit configured to select an individual byte of the data selected by the output multiplexer in accordance with the byte data contained in the effective address register (column 3, lines 9-14).

Aoki fails to teach a clock circuit for selectively applying clock pulse in response to a mode access signal. Shirotori teaches a circuit for selectively applying clock pulses to one or many ways of associative cache in response to a mode access signal (fig. 3, column 2, lines 8-16).

It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize mode-switching circuit of Shirotori in the system of Aoki to

automatically switch between high-speed access mode and power saving mode (Shirotori, column 1, lines 55-67).

As per claim 2, Aoki teaches a tag array connected to be addressed by said address circuit for storing first and second sets of tag signals corresponding to a corresponding set of data stored in said first and second ways (fig.2, item 22, column 2, lines 65-67, column 3, lines 1-4); and

first and second comparator connected to compare first and second output from said tag array with tag data derived from said address (fig. 2, item 24, column 3, lines 20-23),

thereby identifying one of said ways of said associative caches containing data to be read, said one comparator generating a select signal for said output multiplexer (fig.2, items sel_1 and sel_0, column 3, lines 25-28).

As per claim 3, Shirotori teaches control signal applies clock pulses to both ways of said associative cache when the access time for reading said data from one of said sets is less than a predetermined amount (column 2, lines 54-57, column 6, lines 5-15).

As per claim 4, Shirotori teaches access mode signal is generated from prediction logic, which predicts which of said first, and second ways of said two way associative cache contains said data (fig. 3, column 4, lines 40-67, column 5, lines 1-7).

As per claim 5, Shirotori teaches clock circuit receives data from said comparator identifying which of said ways of said associative cache is to be clocked (fig.3, column 5, lines 4-8).

As per claim 6, Shirotori teaches clock circuit receives an access mode signal, which indicates that both of said sets of associative cache are to be clocked simultaneously (fig.3, column 5, lines 1-4).

As per claim 7, Shirotori teaches access signal selected based upon a need to conserve power or to provide high-speed operation (column 2, lines 8-17).

Claims 8-11 are rejected under same rationales as applied to claims 1-7 above, as Aoki and Shirotori teaches a system for accessing a data cache (fig. 2 of Aoki and fig.3 of Shirotori) with tag memories, translation device, comparators and a multiplexer for selecting output data, a byte select circuit and a clock signal circuit as explained with respect claims 1-2 above. Shirotori teaches two access modes (claims 9-10) (column 2, lines 8-17) and access speed is one half of a maximum access speed (claim 11, column 2, lines 28-31, column 6, lines 20-37).

Claims 12-16 are rejected under same rationales and explanation provided for claims 1-11 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaushikkumar Patel whose telephone number is 571-272-5536. The examiner can normally be reached on 8.00 am - 4.30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone

Art Unit: 2188

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


kmp

Kaushikkumar Patel
Examiner
Art Unit 2188


6/6/06